Ch. 4 Arnold Berleant, *Art and Engagement* (Philadelphia: Temple University Press, 1991), pp. 76-104.
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Chapter Four

ARCHITECTURE AS ENVIRONMENTAL DESIGN

However much the other senses join in the perceptual experience of landscape painting, vision predominates. Because it is necessary for pictorial perception, the visual is the leading sensory strand, for without sight the kinesthetic, haptic, and other modalities of sensory awareness cannot join in. Even so, when we view a pictorial landscape as a participant, the senses combine synaesthetically, and the painting changes from a contemplative object into a world that we enter and in which we engage. Strether's experience of the French countryside becomes our own.

The perception of the physical environment resembles the experience of landscape painting, although differences appear in its sensory modalities, in the force and directness of what is present to us, in the overtness and movement of engagement. The objects of the ordinary world often impose themselves forcibly on our thoughts and actions, and our involvement with them is likely to be active as well as reciprocal. Environmental perception, moreover, holds implications for action that bridge the traditional gulf between aesthetic pleasure and practical

action. As the painting was transformed from an object into a region of active experience, our perception of environment turns us from imaginative participants into real agents whose salient sensory modality is kinesthetic. We become actors in the theater of landscape, to use a metaphor popular in the sixteenth and seventeenth centuries.[1] We are the performers in the art of environment.

As soon as we step from the painting into the world instead of from the world into the painting, we meet conditions more insistent and unavoidable than those of pictorial art. Moreover, environmental experiences are not only sensory: in the human transformations of the natural landscape lies a history of cultural activity far more pervasive than we usually realize. These alterations of the landscape assume patterns that have been guided by habit and local tradition as well as by broader social and technological trends, for the cultural landscape began to replace the natural one with emergence of human society. This human landscape of culture and history is embodied not only in the forms of buildings and roadways but in the bucolic countryside as well; not just in cultivated fields but in places remote and wild; not in the physical configuration of our surroundings alone but in the haptic layer of sounds, smells, and substances that fill our ears and lungs and are absorbed deep into our bodies.

When we come to consider architecture more specifically, we gradually realize that it cannot be considered merely as the art in building but that architecture must be construed inclusively as the creation of the built environment. And because no aspect of the human habitat is unaffected by our presence, there is no exaggeration in saying that architecture and the human

environment are, in the final analysis, synonymous and coextensive. A cultural aesthetic is at work here on a collective art. Furthermore, as the painting as object has dissolved into a world of perceptual experience, the environment can no longer be regarded as an external location but as a physico-historical medium of engagement, a dynamic field of forces continuous with human life.

These broad ideas need to be detailed, so let us pursue a path across this still obscure terrain to explore the aesthetics of the human environment. We shall center first on architecture and on various ways in which a building can relate to its site, ways that suggest different models of environmental experience. Examining how these models are expressed in the design of the human habitat will lead to a metamorphosis of the architectural structure into an environment of engagement.

Buildings are human constructions. They use materials and techniques; they take form and develop relationships among themselves and with their sites in ways that can reveal the ingenuity of imagination as well as an adaptation to the exigencies and opportunities of time and place. Vernacular architecture reflects the temper of a people and the quality of their lived world in ways that also appear in the companion folk arts of music, dance, epic, costume, and other crafts. That is why architecture has central importance for both anthropology and philosophy: It is rooted in the ground of human activities and the requirements for survival, and it both defines and embodies how people inhabit the earth.[2]

Yet we live in a self-conscious age in which traditional building has become anachronistic and the local artisan builder has been replaced either by the engineer or by the architect schooled in techniques and styles that have lost their bond with history and region. When architecture has not embodied bureaucratic anonymity in dully conventional boxes or imitated the classical orders in an effort to acquire at least the appearance of probity, it has become internationalized. Movements in our century like the Bauhaus and the International Style have left their origins behind to appear often as ungracious and derivative forms in the most unlikely places. Even postmodernism, that recent phase of architectural fashion, becomes in its less imaginative and playful appearances a mere commonplace book of unhinged design features, floating free of their original meanings, functions, and settings.

Architecture consists most fundamentally in reshaping the earth's surface. The physical presence and social use of architectural forms and structures belie many of the traditional distinctions and diremptions of aesthetic theory, such as those between form and matter, beauty and function, work and appreciation, even between art and morality. The rootedness of a building in the ground and its social function are its basic and determining conditions. Let us begin with the first of these.

A built structure may be related to its site in different ways not always the result of a conscious design decision. Sometimes the placement of a building is the consequence of zoning regulations or physical constraints imposed by the size and shape of its lot or the conventions of its neighbors. Yet in these cases as much as in those in which the site of a building is chosen by

the architect with deliberation and care, placement displays a particular kind of vision, the perception of things in certain ways and not in others. The siting of a building, as much as its architectural design, is a physical statement of personal and cultural beliefs about the human place in the world. Buildings stand, indeed, as the embodiment of such beliefs. They depict the human abode in a variety of contrasting ways: aloofness, domination, separation, hostility, enclosure, balance, continuity, integration.

A building that stands alone is an isolated object. It may aspire to lofty monumentality, as with a skyscraper or cathedral, which by an upward thrust looks to the space above it, whether from motives of spirituality or economy. The space surrounding singular structures is the result of incidental circumstances. It may be made abstract or spiritualized, transfigured into colored light admitted through stained glass in the forms of religious personages or parables. Or the ambient space may be attenuated into distant regions, where from an observation platform one gains panoramic views but cannot see the building's immediate setting or its site. Similarly, when a dwelling or small building stands in bare isolation on its plot, the surrounding space frequently does not exist for perception. This may occur either because the structure is blind to its site--left unornamented and barren, enclosed by grass, pavement, a parking area, or roadways--or because the building is contiguous with other structures. Such a conception of architecture may be described as monolithic.

Connecting a building with its immediate surroundings softens the abrupt boundaries of its walls and boldly expands its limits. This may result merely from the gesture of placing the

skyscraper or cathedral on a plaza. Often the setting is not so grand, as when a house rests gently on its plot amid foundation plantings. A wall, a fence, or a road typically provides a clear edge to the site and defines the limits of the surrounding space. In the most memorable cases, a setting may be elaborated deliberately and with sensitivity, suitable to the scale and significance of the structure. The formal pool of the Taj Mahal and the gardens of Versailles are among the most eloquent developments of the conjunction of building with site. We may think of this as a cellular conception of architecture, in which the building is the nucleus of its site and both, together, form an integral unit. As a cliche of suburban housing developments, clusters of these cells may spread over vast areas without ever attaining greater form or acquiring the identity of place, remaining, as in the Los Angeles basin, loosely connected pieces of domestic protoplasm of a still inchoate creature.

The need for greater harmony in the built environment appears in the complex organization of structures that creates its own total and self-contained environment. This organic conception of architecture takes many guises, from the building-plaza complex that may include an arcaded entrance, planters, outdoor seating areas, sculpture, and perhaps a fountain, to the shopping center and the industrial park; from the medieval walled city, architecturally and socially self-enclosed, to the new town, in many ways its modern counterpart. The college campus can be a particularly felicitous instance of the organic model when it is conceived and built as a total environment, as in the case of Jefferson's University of Virginia; Ramee's Union College in Schenectady, New York; Trent University in Peterborough, Ontario; and Stone's State University of New York at Albany. The organic conception may even take a visionary form, as

in Schulze-Fielitz's Space City or Soleri's arcologies, where the construction of a total urban environment is upward, housing all city functions in a multi-tiered, largely self-contained structure.[3]

A still different model of architecture is one that elaborates a structure sensitive to the distinctive physical features of its location, incorporating them into the design and reaching toward a unity of building and site. Here the building complements its site, carrying out its suggestions, incorporating its features, assuming a place through adaptation rather than imposition. This ecological conception integrates structure and site by blending the building into the physical and qualitative features of the natural landscape to achieve proportion and harmony.[4] From Mediterranean villages that have accreted to their sites over long centuries, fusing to rocky mountainsides, embracing protected harbors, or nuzzling among hills, to the New England farmstead that seems to have grown out of the contours of the land, vernacular architecture and its derivations typically express this respect for the landscape, adapting and adjusting over time to the economy of conditions and need. Contemporary architects have sometimes consciously followed this model, as in Frank Lloyd Wright's classic Fallingwater, which incorporates into its design the overhanging rocky strata of its brook site, Andrew's design for Scarborough College, which wraps around a steep hillside, and Soleri's Arcosanti, where a pueblo-like cliff dwelling of concrete structures harmonizes with the sun, stone, and the Native American historical presence in the American Southwest.

These four relations of building to site--monolithic, cellular, organic, and ecological--are

familiar, and while they may be combined at times, they exemplify different sensibilities to environment. Yet these types do not just represent ways of seeing, ways of sensing space and mass and of apprehending the qualitative characteristics of the building site. They embody more, too, than ways of building. They provide ways of being, for each of the different architectural patterns originates in a distinct conception of the human environment. Each provides an embodiment of that conception and, most important of all, each shapes and directs the experiential world of its inhabitants. Architectural structures, then, do not stand alone but must be related to environmental experience. What is such experience? What is environment?

We can look in vain for an explicit definition of environment in the writings of cultural geographers and cultural ecologists, where we would most expect to find one. The usual practice is to adapt our common sense understanding to the purpose, taking environment to mean the physical surroundings. Philosophers tend to be more explicit, yet those few who face the demands of definition tend to retain the same division between people and their surroundings. All such proposals suggest the definition of environment sanctified in the Oxford English Dictionary as "the object or the region surrounding anything." Cartesian dualism remains alive and well.[5]

Yet the actual patterns in which the human world takes shape display forms of grasping environment that are far more varied than those that conventional usage has made orthodox. In constructing their habitats, people have created different kinds of environmental order that reflect the contrast in attitude and experience between disinterested contemplation and aesthetic

engagement. There is a scope here that resembles the range of relationships of building to site from isolation and division through degrees to continuity and integration. At least three patterns of environmental experience can be identified in discussion and practice: contemplative, active, and participatory.[6]

Like the panoramic landscape described in the preceding chapter, the contemplative paradigm has become the standard for environmental experience. This attitude toward art, originating in classical philosophy and assimilated into the structure of modern aesthetics, lies at the heart of the notion of environment as surroundings, importing a visual model to explain our apprehension of space. The ideas of the art object's separation from what surrounds it and the special attitude of disinterested contemplation that is required for regarding the object's intrinsic qualities have become silent partners in most discussions of architecture and environmental design.

Adopting a contemplative attitude, environmental experience takes the form of the gaze of a spectator removed, even distant from the world being observed. Attention is directed to how objects are placed in spatial emptiness and especially to how they will be seen in relation to each other.[7] This attitude appears in the monolithic and cellular conceptions of building, where a structure is isolated either alone or on its site: a house on its grassy lot with hardly a shrub to soften its stark geometrical contours, a skyscraper in austere solitude on its plaza. Contemplation produces a spectator attitude toward architecture, in which the appearance of a building seen from a distance is the standard by which it is known and judged, and it is expressed in

architectural models and perspective drawings. Visual buildings may be facades primarily, in which the third dimension is a practical necessity, incidental to their beauty, and the exterior is distinct from the interior, or they may dissolve into pure surface, as in the curtain-wall skyscraper.[8] Such buildings, moreover, often confront us with continuous planes of monotonous regularity, in which the only imperfection is an insignificant opening for access. The same visual influence takes a contrary form in the monumental public building of classical design whose entrance is its most prominent feature, yet whose site on an escarpment, emulating the Parthenon, places it in lofty dominance atop a pedestal and makes access difficult. Such structures usually stand in isolation, often opposing the viewer with their grandiose symmetry. On a more modest scale appears that monument to petit bourgeois aspiration, the development house, its brick facade limited to the front, which is visible from the street, separated from its neighbors by a fence or hedge, and gazing outward through a picture window that mirrors its visual isolation.

Certain traditions in garden design display the same contemplative structuring of experience. The appeal of French gardens lies in the formal designs of manicured flower beds and geometrical pools, where carefully articulated patterns of color and shape are confined within sharply defined borders. These are gardens best seen from a distance, where the eye can identify the forms and encompass the full array. Renaissance Italian gardens share a similar formal attraction. Their artful blend of architecture and planting, with clipped hedges paralleling stone balustrades, formal pools, statuary, fountains, descending terraces, and lines of poplars conveys a controlled humanistic balance of the natural and the man-made. Objectivity and harmony of place pervade the scene.

The contemplative environment is spread before us, too, from the scenic outlooks constructed as amenities for the modern automobile traveler. Usually bounded by a barrier wall, these are places designed for one to pause on a journey to enjoy the view of a distant landscape. Like the urban panorama viewed from the isolated vantage of an observation platform, these outlooks, at their best, offer an impressive picture of the surroundings from a commanding height. Yet the landscape they present is inaccessible, open to the eye alone, having no continuity with the viewer nor allowing any direct access.[9]

Urban design is replete with examples of the contemplative, visual approach to space. It appears when the cellular conception of building is extended by combining the structure on its immediate site with other similar ones in the grid pattern of city streets. The urban vista also expresses a visual design experience, where a broad, unbroken view can impress an image on our consciousness so vividly that it becomes one of the most powerful identifications we can have with particular cities. Prospects of Park Avenue in New York and the Champs-Elysées in Paris are striking cases of visually compelling urban space. Ceremonial malls and plazas frequently appeal to the sense of sight. The reflecting pool and the mall from the Lincoln Memorial to the Washington Monument offer a great expanse that the eye can cross but not the foot; the Place de la Concorde is imposing to see but unapproachable, having become a great traffic circle. The contemplative visual model can even subsume an entire city, as in Baron Hausmann's redesign of central Paris into avenues radiating outward from the Place de la Concorde and in L'Enfant's similar plan for Washington, while Brasilia is almost totally a visual city. Cities are filled with a multitude of visual designs. Because visual perception is rectilinear, these grand avenues,

boulevards, and malls are straight lines. We do not see in curves or around corners, hence the drama of sight requires ruler-edge rigidity. The eye becomes the effective organ of space, as since the seventeenth century it has been the metaphorical organ of thought.

Custom and frequency give great weight to this classical view, even though it is but one way of experiencing environment and embodies no necessary or irrevocable truth about the world. Still, the contemplative approach is established so securely that it has conquered the very concept of environment. The objectification of environment, however, is the product of an intellectualist tradition that grasps the world by knowing it and that controls the world by subduing it to the order of thought. Such a strategy may have secured the assent of philosophers and scientists but it has not won over the ranks of artists. Wallace Stevens's response, appropriately offered in his "Six Significant Landscapes," is as eloquent as it is explicit:

> Rationalists wearing square hats
> Think, in square rooms,
> Looking at the floor,
> Looking at the ceiling.
> They confine themselves
> To right angled triangles.
> If they tried rhomboids,
> Cones, waving lines, ellipses--
> As, for example, the ellipse of the half moon--

Rationalists would wear sombreros.[10]

It might seem difficult to think of any alternative for urban aesthetics to the static, axially oriented visual space of Renaissance and Beaux Arts planning. This is a problem, however, only if we accept the spectator model of experience. Urban vistas are not spaces of the body, they are spaces for the eye, spaces to be seen but not inhabited. "Pelouse Interdite*" read the signs in French gardens. Experience, however, does not always cooperate with the classical view of separation, and even the French on rare occasions set aside grassy areas for people to lie on. In recent years, moreover, a changing sense of environment suggests the need for a theoretical shift toward overcoming the passivity and separation of the standard theory. It is becoming increasingly clear that environment, far from being a contemplative object, collaborates in human perception and action. This enlarged understanding carries aesthetic as well as practical implications.

* "Keep Off the Grass"

"Vision is born from what is happening in the body," Dufrenne once remarked.[11] The eye is but one factor in our perception of space, an awareness that we grasp through multiple sensory channels. If environment is more than a visual object but is apprehended synesthetically and somatically, what has it become and where can we locate it? Now that we can no longer regard environment from without, what happens when we enter the landscape, not through the magical

beam of the eye but through the overt movement of the body in actual space? Can we even enter a landscape? Is it a discrete space, a space with boundaries we can cross? And if we move, do we move within borders or does our motile position become the center from which environment assumes its forms, its dimensions, its limits? Clearly, the very order of understanding must be re-established.

It is helpful to distinguish two progressive stages that replace the disengaged spectator of the traditional view with a multisensory, actively involved perceiver who is a contributing part of the aesthetic environment. Let us call the first the active model. Unlike the spectator paradigm, which reflects its origin in the contemplative ideal of knowledge, the active orientation centers on action and function. Although its recent sources may be found in the American pragmatic tradition and in continental existential-phenomenological philosophy, the origins of the active model go back much further to the identification of practical modes of knowing and the development of craft technology in the West. This sense of environment considers people to be embedded in their world, implicated in a constant process of action and response. There is no way here in which one can stand apart. A physical interaction of body and setting, a psychological interconnection of consciousness and culture, a dynamic harmony of sensory awareness all make a person inseparable from his or her environmental situation. Traditional dualisms, such as those separating idea and object, self and others, inner consciousness and external world, dissolve in the integration of person and place.

What is common to the various expressions of the active model is the recognition that the

objective world of classical science is not the experiential world of the human perceiver. We have already noted the sharp difference between space as it is presumably considered to be actually and objectively, and the perception of that space. The active conception of environment derives from the latter rather than the former, from the manner in which we are involved in spatial experience rather than from the way in which we objectify and conceptualize such experience. Environment is not outside us to be experienced in consciousness or feeling, nor can it even be construed as surroundings: As actors in the world, we are inseparable from it and fully implicated in its dynamic processes.[12]

Philosophical attempts to articulate this conception of experience have become increasingly influential. John Dewey's conception of the human organism in the environment is a picture of people doing and undergoing things, actively engaged in responding to conditions that impinge upon them. There is no standing apart from the course of events in such a world. In art the organism takes an active role, for "art, in its form, unites the very same relation of doing and undergoing, outgoing and incoming energy, that makes an experience to be an experience." Perception is not purely visual but rather somatic: It is the body that energizes space.[13]

For Maurice Merleau-Ponty, too, perception starts with the body; the presence of the body as here is the primary reference point from which all spatial coordinates must be derived. This leads to grasping the perceived object, not as a discrete material thing, but in relation to the space of the perceiver. I am in space; I live it from within. Space is continuous with my body, grasped from me as the starting point, the degree zero of spatiality. "After all, the world is all around me,

not in front of me."[14]

Extending Merleau-Ponty's spatial concept, O. F. Bollnow uses the notion of lived-space, in which space becomes the medium of action. Here the human body is the originating point of an axis system of vertical and horizontal planes. Yet Bollnow reverts to a position closer to the traditional division between person and environment. For, he claims, the natural zero point of that system is not necessarily where the concrete living person happens to be: It is the "natural place" to which he belongs. His house is "the reference point from which he builds his spatial world," while space outside becomes a space of vulnerability, a place of danger and abandonment. Only in the inner space of the house can one be safely hidden.[15]

By taking the body as the vital center of our spatial experience, Calvin Schrag explains how we view existential space from the body, determining its directional axes and measuring existential distance. "The proper and improper places of utensils, objects, and persons are defined within the context of these regions and territories." The body's field of action, moreover, must recognize and take account of the presence of the other. Yet the egocentricity of this conception remains, for the space around the body is territorial, an enclosed space that is limited by the space of others.[16]

These phenomenological views treat space in its association with the body and its environment, then, not as an independent quantity but as an intentional object related to the perceiving body. Landscape is infused by that body with its meanings, force, and feelings. This

kind of awareness has led to the characterization of architecture as "a matter of extending the inner landscape of human beings into the world in ways that are comprehensible, experiential, and inhabitable."[17]

The conception of environmental experience as active relates to architectural form that joins structures to their environmental settings, as in the organic and ecological models of building. It occurs in efforts to penetrate and dissolve the barrier wall by encouraging the fluidity and continuity of interior and exterior space, long recognized in the sliding walls of Japanese vernacular architecture. Glass windows, walls, and doors; floor plans continuous with an outside patio; interior gardens and atriums--all these contribute to the interconnection of building with environment. So, too, do building materials and shapes that both use and reflect the characteristics of the site, especially when joined with landscape design that employs local vegetation to embrace a structure and naturalize its surroundings. The active environment also encourages people's responsiveness to building and design through congenial forms, comfortable lines of movement, and sensory involvement which, while recognizing the predominance of kinesthetic perception, fully assimilates the visual, tactile, and other senses as part of a single, integrated sensorium. Both in the building and in the neighborhood, efforts are made to replace the inorganic outline of the simple rectangle with biomorphic forms and surprising angles and juxtapositions. Environmental experience as an active process explains, too, how the inhabitant of the city may be understood as a moving part of the urban structure, a dynamic element whose involvement is exemplified in Lawrence Halprin's vivid description of experiencing the street:

> The beautiful street is beautiful--not only because of the fixed objects which line it--but also because of the meaningful relationships it generates for the person-in-motion. His movement is the purpose for the space, and it should function to activate his kinesthetic experience in a series of interesting rhythms and variations in speed and force. The qualities of moving up and down on ramps and steps, of passing under arches and through buildings, of narrowing and widening of spaces, of long and closed views, of stopping and starting are qualities which make a vital urban experience for the walker and his mobile point of view.[18]

The active body has been transmuted through twentieth-century engineering into the automobile driver who, strapped inside a powerful machine, hurls purposefully down the highway, penetrating the reaches of visual space and turning the landscape into a playground. Water skiing is another forceful intrusion of the active, even dominating environmental perceiver. The growing popularity of hiking, camping, and other low technology outdoor activities suggests more gentle ways in which a person may move in the natural environment with care and respect, as kinesthetic, tactile, and other sensory dimensions join in equal balance with the visual. In all such cases, the environment has become the stage on which the beholder has metamorphosed into the actor.[19]

The active penetration of space by the body is not enough, however. Environment does not depend entirely on the perceiving subject; the surrounding world also imposes itself in significant ways, engaging the human person in a relationship of mutual influence. Not only is it impossible

to objectify environment, we also cannot take it simply as a reflection of the perceiver or as the ground on which people carry out their activities. At the same time as we move actively in space, our surroundings exercise a creative influence in shaping our gestures and actions. By recognizing that specific features in the ambient space affect the ways we behave, it becomes necessary to extend the active model of experience to include such influences. We must balance the idea of the lived body and of lived space, of the self as initiating action and generating space, by including in the idea of environment the influences that are exerted on the body, the features and forces that guide our spatial sense and mobility and make an essential contribution to the definition of our lived space.

While the representatives of the active model would freely acknowledge the interchange between body and surroundings, they tend to give greater weight to the first. Yet the body is mor than active, shaping the contours of space through its dynamic force. There is a reciprocity, an intimate engagement with the conditions of life which joins person with place in a bond that is not only mutually complementary but genuinely unified. How is it possible to represent such a pervasive field of experience and action from which the human participant cannot be separated? The usual tactic of removal and distance is unavailable, since the environmental reality that we live becomes our very world, and to presume to stand outside it vitiates both the fact and the authenticity of its participatory properties. To attempt to stand in it implies that we are a heterogeneous element. One tactic would be to construct a conceptual frame that would identify the experiential features of various environmental orders.[20] However, environment does not lend itself to preconstructed models largely because such structures are based on distinctions and

divisions and not on continuities.

For all its intimacy, the active model still retains at bottom the discreteness of person and setting. It is an anthropocentric environment in which, no matter how close the exchange may be, there remains a residual, ineradicable difference. By contrast, the most complete development of environmental experience transcends all division. It is a condition in which every vestige of subjectivity disappears and the irreducible continuity of person and place becomes the fundamental term in grasping the meaning of environment. This is the participatory environment, a sense of the world both most ancient and most recent. To discover where it is recognized we must look to other cultures than those of the West and to other times than the Renaissance through the eighteenth century. For we are seeking a different conception of the experience of environment, one that Western industrial cultures have difficulty in grasping. It is a sense of environment as a field of forces continuous with the organism, a condition where organism acts on surroundings and surroundings on organism and where, in fact, no real demarcation divides them. This is a participatory model of environmental experience. No longer a spectator, no longer even an agent, we join in the movement of things very much as a performer does in theater or dance, activating the conditions with which we live, integrating them with our bodies, and leading them to our own ends by a sensitivity to their requirements. We recognize here the human environment as a continuity of person and place, as a unity of action and reception that is mutual and reciprocal. Environment becomes a dynamic field of mutually determining forces.

Psychologists more than philosophers have developed theoretical accounts of the human

interplay with forces emanating from environmental features, although they are prone to regard these as external influences and as a matter of individual psychology that depends on a personal response. Kurt Lewin's field theory provides a representation of the dynamic framework in which events occur in a life space. Situations possess dynamic properties and Lewin identified those psychological forces in a perceptual region that directly produce a reaction in a person. More recently, the perceptual psychologist James J. Gibson worked out a theory of perception as an activity of the moving body in which the perceiver is an active participant with a sensory involvement in the world. Gibson identified what he called "affordances for behavior," features and arrangements of the environment that offer or provide for us, and in relation to which we behave in certain ways. When we perceive them, we grasp their meanings and values directly. "Affordance cuts across the dichotomy of subjective-objective. . . . It is equally a fact of the environment and a fact of behavior." In recognizing the subtle influences of the forces and properties of environmental configurations on human perception and action, researchers like Lewin and Gibson have worked beneath the conventional divisions between person and object to identify the reciprocities and continuities that join them.[21]

It may be easier to understand the forces emanating from the body as it thrusts itself into the surrounding world than it is to grasp the magnetism of ambient configurations exerting a subtle influence on the body. We are able to sense our own vitality more directly than we can apprehend the pressure of spaces and masses. It is even more difficult for us to grasp perceptually the unity of conscious body and environment. Although both the active and the participatory models of environment recognize the mutual interplay of body and surroundings, two factors distinguish the

participatory pattern of environmental engagement: its recognition of the way in which ambient features reach out to affect and respond to the perceiver and, more important still, the unitary experiential field that results from this reciprocal exchange. For a homogeneity of experience binds perceiver and environment in the same continuous medium.

Attempts to overcome a persistent ontology of separation display a difficult history. Aristotle had his multiple celestial spheres, and although they coalesced into two in the celestial space of Copernicus and the earthly space of Galileo, it took Newton to unify them by demonstrating that both observe the same laws of motion. In our own day, Einstein and Planck extended the Newtonian order to include the knowing observer as an essential factor. The same unity of body and field comes here to perceptual space, and it is in the aesthetic perception of environment that perceiver and proximal objects join most dramatically in the continuity of experience. The revolution in understanding nature has finally permeated the human world.

This continuity of person and environment, this integration through perception of conscious body and world, is the keynote of the participatory environment. Although not usually formulated theoretically, such a sense of environmental participation often appears in research areas such as the ecological sciences and cognitive science, in applied fields like urban planning and agriculture, and in activities such as hiking, camping, small boat cruising, and wilderness travel. We find it as well in some Eastern religions and in animistic religion, and it becomes a condition of those early rituals celebrating celestial events and seasonal change in which there is

renewed interest.[22] Indeed, our primary experience of environment is participatory before we adopt special modes for special purposes: cognitive, scientific, organizational, political and, in conventional ways, aesthetic. The fundamental participatory character of such experience is being rediscovered now by people following many routes--among them phenomenological, hermeneutic, psychological, religious, environmental, artistic. Environmental engagement, moreover, can not only form the basis for an aesthetics of environment but can stand as a model for aesthetic theory itself.[23]

Environmental participation alone, however, is not sufficient to identify an experience as aesthetic. Nor is it enough to add that participation is necessary for such experience to take place. What makes this field experience aesthetic is the central place of its perceptual qualities. These refer not so much to the sensory surface of things as to the acuteness of attention, the refined discrimination of qualities, and the multifaceted resonances of memory and imagination, which join in the rich awareness of activity and passage.[24] Actually, there are no surfaces but only perceptual situations. Surfaces require something beyond, the metaphysics of a Ding an sich, and they imply, therefore, the very division of reality that engagement abjures. Nor is there pure perception in the sense of sensation untouched by our past experiences, our education and training, and our ideas and other kinds of knowledge. The profound influence of culture on perception, for example, has been heavily documented by social psychologists, cultural geographers, and anthropologists. Yet at the same time, aesthetic perception is foundational, continually reappraising cultural experience by digging beneath the layers of accrued meanings and cognitive habits for its authenticity in the directness and immediacy of experience. The aesthetic character

of experience lies ultimately in direct rather than pure perception, in perception apprehended immediately and unreflectively. It is in this sense that we engage aesthetically with environment and other modes of art. Perceptual engagement is the catalyzing and unifying force of the aesthetic field.

Aesthetic engagement with environment is not new; architecture and design have always provided occasions for such experience. Nor, as we have just seen, is the participatory environment peculiar to architecture or, more generally, to the aesthetic dimension of the human world. We are also led to it through our attempts at environmental understanding in general. What has been missing, however, is a theoretical articulation of such environmental activity and its elaboration within the conceptual frame of aesthetics. What are the contours of such an environmental aesthetic?

We must begin with the emergence of a new conception of the human being as an organic, conscious, social organism, an experiential node that is both the product and the generator of environmental forces. These forces are not only physical objects and conditions, in the usual sense of environment; they include somatic, cultural, psychological, and historical conditions, as well. Environment is the matrix of all such forces. As part of an environmental field, we both shape and are formed by the experiential qualities of the universe we inhabit. These qualities constitute the perceptual domain in which we engage in aesthetic experience.

As participants embedded in an experiential field, we act always within the fluidity of a

spatial medium populated by dynamic configurations of mass. And in the continuing formation of space and time in movement and in our reciprocal involvement with the objects and circumstances to which we are joined, we generate our human world. The continuity of conscious body and environment attains its most complex and profound fulfillment in aesthetic experience. In describing this continuity in the experience of painting, Bernard Berenson expressed what is actually a rather frequent occurrence: "When the spectator is at one with the work of art, . . . he ceases to be his ordinary self and the . . . aesthetic quality is no longer outside himself. The two become one entity: time and space are abolished and the spectator is possessed by one awareness."[25]

Berenson is referring here, of course, to our usual idea of physical space and time. Consider, however, the experience of space in a participatory environment. Unlike the panoramic landscape and the contemplative environment, products more of intellectual history than of perceptual experience, the participatory environment develops a spatial continuity with the viewer. Landscape becomes environment and environment becomes humanized.[26] One can no longer stand apart as a disinterested spectator and the appeal of landscape is not exclusively visual. In fact, the sense of sight loses its privileged role as a sensory channel, since the participatory environment exerts an appeal that far exceeds the visual. Spatial awareness draws most heavily on kinesthetic responses--the body's apprehension of mass, density, texture, and the various sense qualities that constitute the richly complex perceptual experience of environment. Furthermore, movement and time are essential components of such experience, and the homogeneity of experience renders them inseparable from space. There is a continuum here of the conscious

human body and its perceptual world.

The continuity of the organism with its habitat is a central tenet of the new science of ecology. Yet this continuity is more than a biological fact; it is also true of the perceptual environment of the conscious human organism. Merleau-Ponty claimed that these two must ultimately be joined, for even physical concepts have their origins in perceptual experience: "Either what I call depth is nothing or else it is my participation in a Being without restriction, a participation primarily in the being of space beyond every [particular] point of view."[27]

The perceptual awareness of environment has become central here. Space floods our awareness kinesthetically through muscle tension and movement, as in walking or driving, for, in part, our "spatial concepts are internalized action."[28] We grasp space tactually as well, from its subtle presence to the skin over the entire body. At times we detect spatial regions through sounds heard and uttered. There is even olfactory space, when smells such as cigar smoke, the aroma of a bakery, or the fragrance of a woman's perfume announce their areas. Sensory modalities may combine in the awareness of space. Like the Aivilik Eskimos, we may live in acoustic-olfactory space, or we may inhabit tactile-kinesthetic space during snow or dust storms, under water or in dense fog.[29] But these various sensory channels to spatial awareness are never singular or even plural; they can be isolated and identified only later on reflection. "Both pure tactile and pure visual experience, with its space of juxtaposition and its represented spaces, are products of analysis. There is a concrete manipulation of space in which all senses collaborate in an undifferentiated unity."[30] Our spatial world emerges, then, from an environmental sensibility that

blends sensory modalities, just as it fuses person and environment.[31]

This is a phenomenological aesthetic of space, and it defines a world vastly different from the traditional scientific ideal of physics. Space has no precise boundaries; it is not quantitative and mathematically measurable; it is not universal and homogeneous. Most of all, it is not objective, distinct, and separate from the person inhabiting it. Perceptual space is instead qualitative, not uniformly measurable but with fluid, hazy boundaries, rather like the en space of Japanese architecture, the intermediate space between inside and outside, as in the engawa, the space surrounding a Japanese house that is created by the continuation of the floor beyond the exterior walls. Perhaps the Japanese concept of ma, usually translated as "space-time," incorporates this aesthetic most completely. Here object, space, movement, and change are joined in subtle continuity: Space is perceived as identical with the events occurring there, and time is recognized only in relation to movements and spaces.[32] Space, then, is human space, personal space, space relative to the perceiver, and as heterogeneous as the infinitely varied times and conditions of human life. It is the space in which we live, the space which we inhabit. Thus Heidegger:

> Space is not something that faces man. It is neither an external object nor an inner experience. . . . Spaces, and with them space as such--"space"--are always provided for already within the stay of mortals. Spaces open up by the fact that they are let into the dwelling of man.[33]

We come to understand space, then, not as something outside of and opposed to an

observer but as reaching out to encompass the person as a participant. As the space we live in becomes localized and personal, smoothed by long activity and infused with memories and meanings, it assumes the identity and affection of place. This is our earliest acquaintance with space and with the sense of personal space for which we strive. Through architectural and environmental design we can recognize, extend, and develop the possibilities of such experience. As with space, so with mass, time, and movement. Later chapters will pursue the last two in other contexts, but it will be useful here to examine mass, which may appear at first to be the antithesis of space.

Mass usually epitomizes the environmental forces that oppose the body: obstruction--obstinate and undeniable. Yet here too we tend to construct a difference in kind where there are only changes in degree. Approaching mass perceptually through the body, we discover that its firmness and regularity begin to disappear. The perception of mass, for example, is affected more by the degree of opacity than by physical density. Clear glass confronts us less than dense fog or smoke, while reflective surfaces cause physical objects to disappear, a salvation for much contemporary architecture when dull boxes disappear behind mirror-glass sheathing. Mass is also correlated with light: Shadows are heavier and thicker than bright light, darkness than daylight, and all carry intervening degrees. The fusion of mass with the human body is not found in Le Corbusier's "modulor," however, where the human form is taken as the germinal unit, the design module from which the proportions of a building are derived. This is physical mass, not perceptual: It translates the experiential body into a material object instead of transforming mass into the perceptual space of body experience.

Our perceptions occur, for the most part, however, independently of physical attributes. The contrast between space and mass fades as mass dissolves into space and space condenses into mass. We can regard space, for example, as rarified or liquid mass, a medium through which we move much as fish swim through water. Objects, then, are not solids opposed to empty space; they are part of that space, concentrations of it, so to speak. Thus in Japan, a rock, in representing the mononoke that permeates a locality, acquires the quality of the space it inhabits, condensing that space rather than opposing it.[34] A continuum of space and mass thus emerges in which space is diffused mass and mass concentrated space.

In its broadest outlines, then, the perceptual experience of environment is made up of features and configurations given shape by human agency and, in turn, shaping those who perceive them. To understand how this happens requires us to enter the environment as participants and not to regard it as observers. Yet this is difficult to talk about, in part because we have few concepts and techniques in our tradition to assist us. The strategems used by architects and planners are the devices of spectators rather than of inhabitants. The site or building plan, the elevation, the isometric projection, the model, the aerial view--we have seen how all these exemplify the disinterested viewer's relation to an external environment. They describe the fixed structures and enclosed spaces of the environment as seen from without. Even landscape architecture tends to concentrate on the masonry of structures and to treat plantings as static objects rather than as masses of varying densities changing over time.[35] We have few conceptual tools by which to approach the design of movement and change--of people, light, seasons, of time itself. Nor do we

stress the need to shape environment from within as participants.[36] Yet the human environment is lived and must be formulated to reflect this in theoretical terms as continuous, vital, and inseparable from the people who inhabit it. Not only is it important to understand environment in this fashion; we must also develop a fuller somatic consciousness of these perceptual properties so that we become more responsive to its dynamic workings and at the same time more deliberate in determining its shapes.

The arts can assist us in this, for here perceptual experience finds its richest domain. The sensory world of qualitative perception has always flourished in the arts, where visual, auditory, tactile, and kinesthetic awareness elaborate its possibilities with subtlety and power for those who have developed a discerning appreciation. Moreover, we can also discover in the arts a particular sensitivity to environmental perception, and it is here that we encounter the qualities of human space most directly. Marin's active sea and mountainscapes, Kokoshka's dynamic urban landscapes, the compositions of de Stael and Rothko that shape orders of varying masses and spaces, Cunningham's exploitation in dance of ordinary movement and space, Grotowski's return in theater to sacred space and ritual--these are but random instances of an endlessly varied exploration by twentieth-century artists of the perceptual possibilities of the human realm. Art here functions as a cultural vanguard, leading us to discover features of environmental experience that come to emerge as vital aspects of the contemporary world.

Nowhere is this more significant than in those arts whose very nature bridges the cultural chasm between the aesthetic and the practical. The environmental arts of architecture, design,

landscape architecture, and city and regional planning offer unmatched opportunities for recognizing and realizing human values by enlarging the capacity and scope of our experience. These arts of environmental design do more than give shape to space: They create the human realm, the possibilities of vision, audition, and movement, the scope of actual perception. In establishing the perceptual conditions for life, the environmental arts help determine human culture. With such a role and such an influence, these arts are the equal of any.

We find ourselves, then, inhabiting an aesthetic environment, a contributing part of its dynamic continuity.[37] Architecture has become environmental design, and environment has turned into a performative activity of persons and places. Once we recognize this, the many subtle ways in which environmental engagement occurs begin to emerge. Engagement relies on sensory involvement, certainly, but perception always bears a mnemonic component, for past perception and expectation join in the conscious present. Perceptual recall is a key factor, for example, in experiencing the stone garden of the fifteenth-century Zen monastery of Ryoanji, near Kyoto. Here fifteen rocks are set in an ocean of raked gravel, yet from wherever we sit one of the rocks is obscured. Only memory and anticipation bring it into conscious play with the others. An expanded perceptual consciousness occurs where architectural design encourages the connection between the outside and inside of a structure so that our awareness of the one persists as we perceive the other. In cases like these, sensory imagination continually supplements our direct sensory awareness. Some people hang photographs of their house on an inside wall and of their boat on an interior bulkhead. As with our home or our boat, we retain the exterior image of our car when we are inside it and the sense of its interior when we stand without. Similarly with a

building. Rather than being dismayed at the fact that one cannot see at the same time both inside and outside or all sides of a building, we must recognize that architectural experience is not primarily visual, at all. It is rather an experience of the body moving in space, creating through a developed capacity for awareness a functional unity of sensation and action as we enter into a temporal relation with the structure. Eventually a total physical and conscious sense of coherence of person, structure, and setting may develop.[38]

This notion of participatory engagement with environment, however, may yet seem evocative but insubstantial. The dynamic continuity of space and mass, of person and place, of nature and perception, of the aesthetic and the practical, of sensation and imagination, of presence and recollection--all these may appear to be but fanciful constructions with little bearing on the specific demands of the environmental arts. Nothing could be more mistaken. The most compelling argument in favor of engagement is an argument from experience, and it will help make these ideas about environment more definite and their force more direct by translating the notion of participation into the language of environmental design. For the implications of an aesthetics of engagement, as well as the evidence in its support, extend to the full range of human environments, from the museum to the highway, from domestic architecture to city planning, from park design to wilderness management. Let me offer, then, some illustrations and possible applications of this aesthetic.

Consider the museum. Museums are ordinarily thought of as repositories of great art, places where these works can be kept safely and exhibited as rare and precious objects to a

deferential public. Yet the discussion of pictorial space in landscape painting in the preceding chapter has direct consequences for museums. A participatory aesthetic implies that we experience art objects from the best position for engaging in the space of the paintings. For example, in his paintings of Mount Sainte-Victoire Cezanne obtained his distinctive grasp of space by situating himself far across the valley. Those paintings also require the viewer to stand at a considerable distance in order to project into the pictorial space. Monet often demands middle distance, although sometimes, especially in the many Nymphées and other late works, the optimum distance is very great. Without sufficient distance, the brushstrokes do not have the room to resolve into richly evocative blossoms and so remain unrealized abstractions. It is more usual, however, for landscapes, portraits, and still lifes to need a surprising degree of intimacy. If we stand close to the pictorial surface, we can no longer regard the object as a whole but look into the painting and merge with its space. Museums and galleries could be designed to lead the viewer into the most effective position and relationship to particular art objects, giving perceptual shape to the sequence of art experiences.[39]

Buildings also offer opportunities for participation in ways that contrast with their usual treatment as visual objects. The buildings that engage us most are not isolated structures that oppose the perceiver; rather they possess human scale, joining with the people who complete them. The Katsura Imperial Villa in Kyoto and the Calgary Airport in Canada, two vastly different structures, have the common effect of evoking our active interest by reaching out to us with embracing configurations that welcome our approach and invite access. This invitation to take part in architecture is nowhere more pronounced than in the case of entrances and doorways.

When effective, these draw one in rather than put one off. They do not interpose obstacles or ambiguous shapes, nor do they present indiscernible or intimidating ways of passing into a place or a building. A participatory entrance is easily and clearly recognized. It is appropriate to the body, perceptually inclusive, and welcoming in its affective qualities, such as the stairway to the church in Sibenik, Yugoslavia (see illustration). Gateways function differently, marking openings in a boundary or a barrier. They may be designed, like the Arc de Triomphe, as symbolic monuments to impress the spectator visually and intimidate one physically. At their humanized best, however, they provide physical evidence of the transition from one space to another and an invitation to pass through.

Paths are environmental features with rich significance. They are not experienced as cognitive symbols but, if one insists on using that term, as living symbols that embody their meaning, symbols that make us act, make us commit our bodies, our selves, to choices. Malcolm Lowry conjectured that "there has always been something preternatural about paths . . . for not only poetry but folklore abounds with symbolic stories about them: paths that divide and become two paths, paths that lead to a golden kingdom, . . . paths that not merely divide but become the twenty-one paths that lead back to Eden."[40] But what is most striking is the way in which paths, as features of environment, act upon us. In describing the hiking path, Bollnow comments that "the path does not shoot for a destination but rests in itself. It invites loitering. Here a man is in the landscape, taken up and dissolved into it, a part of it. He must have time when he abandons himself to such a path. He must stop to enjoy the view."[41] The pedestrian streets of Venice are a well-known example of paths that lead one onward. Others, such as La Grande Rue in Geneva and

even the path atop the city walls of Dubrovnik, also possess this quality, common in towns and cities whose streets originated as foot trails. More recently, linear parks that are built around pathways, like San Antonio's Riverwalk, may succeed in creating that invitational quality. So may a boardwalk that crosses a marsh, such as the one in Plitvice Lakes National Park (see illustration). Even college campuses may have paths that exert a similar attraction on the pedestrian.

Roads, like paths, act on us in diverse ways, inviting us to move down them or putting us off. This may explain why routes are often more appealing in one direction than in the other, so that on a routine trip we are likely to follow one course going and a different one returning. A road that engages the traveler will reflect the geological and topographical features of the countryside, conveying its contours to the driver and encouraging a response to the rhythms of the landscape. When a path or road curves, for example, its appeal is kinesthetic as much as visual: it beckons one to move down it and around the bend. The Taconic State Parkway north of New York City is an outstanding case of environmental sympathy, a divided highway that moves through the hills of farms and woodland and shapes its path to the rising and falling terrain. At the same time as the road responds to the land, the driver responds to the road, for the Taconic leads us on, offering a constantly changing rural panorama to the participating perceiver.

Guided by an aesthetics of engagement, housing would bind people to a place by domestic architecture that reflects its physical, historical, and regional traits, rather than the impersonal imposition of stock patterns on an anonymous tract of land. The use of local materials and regional designs and of site plans that are sensitive to the geomorphic characteristics of the area,

and the modification of standard architectural features to fit individual personalities and needs--steps such as these would help achieve communities with a magnetism that would provide a sense of place and personal belonging.[42] Cities, too, can offer opportunities for embodying the distinctive spatial and cultural experiences of different social and cultural groups and traditions and not be mainly economic arrangements shaped by a politics of expediency, cost, and profit. An engaged urban environment joins built structures to the moving body instead of distributing urban spaces as if they were viewed in perspective from a fixed point. As there are few straight lines or flat planes in the natural environment before the visually guided human hand has had its way, so urban space can be shaped for the dynamic body and not just for the eye. One of the city's strongest aesthetic appeals is to the person as pedestrian, and this appeal rests very much on its attraction to the moving body, its ability to entice one to follow along a street in relaxed and irregular rhythms.

Open space has many shapes in addition to the street. Plazas and squares may be inviting and discouraging in much the same way. They need not present us with simple geometrical forms that require distance to be observed, for these tend to oppose the person. A square need not be square, and it need not be grand. Participatory spaces encourage entry, they evoke our interest and pull us in. The shape of a public place can reflect both its function and its larger setting. A rectangular village green or campus quad spaced about with lofty trees may create an air of tranquility and an equanimity of spirit. Less formal shapes and smaller and more intimate spaces are more likely to engage the body as a dynamic inhabitant. A public square can engage us by comfortable irregularities, dividing great open spaces into smaller protective ones in

which enclosure replaces exposure, and providing an easy habitation for the body and opportunities for social exchange. The main plaza in the Colombian town of Giron is home to a great spreading tree, offering shade and shelter from the brutal sun and open, barren ground. A pedestrian mall in Sacramento breaks up the rectangular space between large apartment buildings with plantings, walks, lampposts, and benches. These instances differ sharply from the overpowering forms and intimidating spaces of the federal area in Washington, City Hall Plaza in Boston, and Brasilia, urban areas that swallow the body and diminish the person.[43]

Urban experience can extend beyond the functional to offer opportunities for tapping a variety of wider connections: the distinctive physical and cultural traits of a city's geographical and historical features; the play of fantasy and imagination in the color, surprise, and unexpected richness of the urban setting; the metaphysical roots of human existence through occasions for encountering the sacred and the artistic; the cosmological bonds with the universe by the association of a city's site and plan with the constant and inevitable transition of the seasons and the changes in position and light of the sun and moon.[44]

All these instances suggest how aesthetic engagement can be a guiding principle in experiencing environment. Entire participatory environments, however, are unfortunately no longer common, particularly as we enter the industrialized world, with its rationale of regimentation, uniformity, and mechanical efficiency. One thinks, perhaps with romantic nostalgia, of the New England farmstead, whose house and outbuildings seem to emerge organically out of the landscape while they are enclosed protectively by the surrounding hills, and

whose drives and paths follow the contours of the land, the physical evidence of long and regular activity. Here is the reciprocity of the human and the natural made tangible. Yet it is possible to attain today, in a conscious, deliberate way, what was achieved by intuitively through ages of use and custom. To accomplish this, however, requires recognizing the processes of environmental participation and applying them with artistic sensitivity to particular situations.

Environment, then, is no foreign territory surrounding the self. Understanding environment involves recognizing that human life is lived as an integral part of a physical and cultural medium, under conditions through which people and places join together to achieve shape and identity. Within this environmental medium occur the activating forces of mind, eye, hand, climate, and the other processes of nature, along with the perceptual features and structural conditions that engage these forces and evoke their reactions. To grasp environment, very vestige of dualism must be discarded. There is no inside and outside, human being and external world, even, in the final reckoning, no discrete self and separate other. Marcel urges us to say, not that I have a body but that "I am my body."[45] So we can say, similarly, not that I live in my environment but that I am my environment. The conscious body moving as part of a spatiotemporal environmental medium becomes the domain of human experience, the human world, the ground of human reality within and from which discriminations and distinctions are made. The traditional notion of the environment as an external setting is a false abstraction from the unity of the human world. We live rather as a contributing and responding part of a dynamic nexus of interpenetrating forces.

An environmental aesthetic becomes at the same time, then, a cultural aesthetic, the analogue of the cultural landscape of which anthropologists and geographers speak. It comprises not only a study of the perceptual features of the environmental medium that participate reciprocally with people but includes as well a correlative study of the influences of social institutions, belief systems, and patterns of association and action that shape the life of the human social animal and give it meaning and significance. The cultural aesthetic is the characteristic sensory, conceptual, and ideational matrix that constitutes the perceptual environment of a culture. This includes the typical qualities and configurations of color, sound, texture, light, movement, smell, taste, perceptual pattern, space, temporal sensibility, and size in juxtaposition with the human body, and the influence of traditional patterns of belief and practice on the creation and apprehension of these qualities. The human environment is always historico-cultural, and formulating a cultural aesthetic requires us to identify the configuration of perceptual features that is characteristic of a particular human culture at a given time. Certain places exemplify such an aesthetic: In a medieval Gothic cathedral appreciative perception through distancing does not occur. Here light filtered through stained glass windows, linear masses and volumes, the reverberations of chanting voices and organ, the smell of incense, and the taste of wine and wafer combine to absorb the believer into a multisensory, multimedia environment. Another example is the Chinese scholar's garden of the eleventh to nineteenth centuries, which creates a harmony of spirit and place, man and nature. Studies in cultural aesthetics are an important way in which aesthetics can enter the social sciences.[46]

We arrive, then, at a conception of environment as a dynamic perceptual-cultural system

that assimilates person and place. Heidegger writes of a bridge creating an environment by bringing "stream, banks, and land into each other's neighborhood." The bridge actually "gathers the earth as landscape around the stream." More than this, it "gathers to itself . . . earth and sky, divinities and mortals."[47] We must, then, dispense with the notion of space and consider place, instead, for it is through dwelling, belonging in a place, that the human relation appears. Like the idea of a painting as an object, the environment as external surroundings has been transformed. By exploring the architecture of environment, we can begin to grasp how structure is transmuted into environment and environment into a medium of engagement. Environment has become a realm of dynamic powers, a field of forces that engage both perceiver and perceived in a unity of experience, turning the world we inhabit into a truly human habitation.

NOTES TO CHAPTER FOUR

1. J.B. Jackson, "Landscape as Theater," Landscape, 23, No. 1 (1979), 3-7.

2. The phrase derives from Holderlin through Heidegger. See Heidegger's "...Poetically Man Dwells..." in Martin Heidegger, Poetry, Language, Thought, trans. Albert Hofstadter (New York: Harper & Row, 1971), pp.213-229.

3. Eckhard Schulze-Fielitz, "The Space City," in Programs and Manifestos on 20th Century Architecture, ed. U. Conrads (Cambridge, Mass.: MIT Press, l970), pp.l75-l76; Paolo Soleri, Arcology: the City in the Image of Man (Cambridge: MIT Press, 1969).

4. To my knowledge, Jusuck Koh was the first to use the terms "ecological architecture" and "ecological aesthetics" in this sense. See his "Ecological Design: A Post-Modern Design Paradigm of Holistic Philosophy and Evolutionary Ethic," Landscape Journal, Vol.1, No.2 (1982), 76-84. Allen Carlson proposes the notion of functional fit to describe the integrated relation of a building to its physical and cultural environment, in "Reconsidering the Aesthetics of Architecture," Journal of Aesthetic Education, 20/4 (Winter 1986), 21-27.

5. One environmental design researcher locates environment in the physical correlate of the social situation, providing non-verbal communication through its fixed and non-fixed features. See, for example, Perspectives on Environment, I.R. Manners and M.W. Mikesell, eds. (Washington, D.C.: Association of American Geographers Publication No.13, 1974); also Amos Rapoport, The Meaning of the Built Environment (Sage, 1983). Philosophers, not surprisingly, come closest to making this most basic term explicit, and it occurs appropriately in discussions of environmental aesthetics. For Hilde Hein environment "entails a distinction between object and surround, a figure and a ground....Our environment is the context--spiritual, physical, living and non-living--which defines us." Hilde Hein, "Conceiving Environmental Quality, Toward an Aesthetic of the Environment," unpublished paper, 1972/73. After reviewing six possible relations between a person and other things and people, Francis Sparshott identifies the most likely ones in talk about the environment as the relation of self to setting and, secondarily, of traveler to scene. Francis E. Sparshott, "Figuring the Ground: Notes on Some Theoretical Problems of the Aesthetic Environment," Journal of Aesthetic Education (1972), 13. The only book devoted to the subject of environmental aesthetics approaches the definition metaphorically, describing the environment as "a continuing theatre for sensing and acting," and suggests that environmental perception concerns the quality of our surroundings, a usage closer to the one argued for here.
Environmental Aesthetics, B. Sadler and A. Carlson, eds. (Victoria: University of Victoria, 1982), Western Geographical Series Vol.20, p.1. See also The Oxford English Dictionary (Oxford: At the Clarendon Press, 1933), Vol.32, p.231/1, df.2. The citations in the OED begin with Carlyle in 1830. Of course the etymology may be followed back to the French en in + viron, circuit < virer, to turn, to sweep round, which less substantiate the usual meaning of environment

than suggest human activity in a place.

6. A fuller development the following typology of environment and of the instances of participatory environments appears in my paper, "Towards a Phenomenological Aesthetics of Environment," in Descriptions, ed. H. Silverman and D. Idhe (State University of New York Press, 1985), pp.112-128.

7. See, for example, Kevin Lynch, The Image of the City (Cambridge, Mass.: MIT Press, l960), pp.43-44.

8. See Robert J. Yudell, "Body Movement," in K.C. Bloomer and C.W. Moore, Body, Memory and Architecture (New Haven and London: Yale University Press, 1977).

9. "Perception of scenery is only open to those who have no real part to play in the landscape." David Lowenthal, "The American Scene," Geographical Review, LVIII, 1 (1968), p.72.

10. In The Collected Poems of Wallace Stevens (New York: Knopf, 1954), p.75.

11. Mikel Dufrenne, in a lecture on Merleau-Ponty's "Eye and Mind" at the State University of New York at Stony Brook, 13 October 1979.

12. Christopher Tunnard puts the point eloquently: "Is man a part of all he sees or a spectator only, studying landscapes as Burckhardt advised his readers to study history, as one would contemplate a storm at sea, safe on the shore? Should we not be terrified that the storm may touch us? Are we not involved, emotionally and physically, in nature, and is not our role one far more deeply committed than that of mere guardianship or good behavior toward the wild?" A World with a View (New Haven and London: Yale University Press, 1978), p.29.

13. John Dewey, Art as Experience (New York: Minton, Balch, l934), pp.43-44, 48, 3, l3, 25, 29, 58, 60, 65, 75, l62.

14. Maurice Merleau-Ponty, Phenomenologie de la perception (Gallimard, l945), pp.119, l58; Phenomenology of Perception, trans. Colin Smith (London: Routledge and Kegan Paul, 1962), pp.150-151, 234; Eugene F. Kaelin, An Existentialist Aesthetic (University of Wisconsin Press, l966), pp.239, 240; M. Merleau-Ponty, "The Primacy of Perception," in The Primacy of Perception, ed. J.M. Edie (Northwestern University Press, l964), pp.14, l6, 42; "Eye and Mind," in The Primacy of Perception, p.l78.

15. O.F. Bollnow, "Lived-Space," in Philosophy Today, V (1961), pp.31-39. Reprinted in Readings in Existential Phenomenology, ed. N. Lawrence and D. O'Connor (Englewood Cliffs: Prentice-Hall, 1967), pp.178-186.

16. Calvin O. Schrag, Experience and Being, (Evanston: Northwestern University Press, 1969), pp.136, 137, 170, 192.

17. R. C. Bloomer and C. W. Moore, Body, Memory and Architecture, p.l05.

18. Lawrence Halprin, Cities, rev. ed., (Cambridge, Mass.: MIT Press, l972), p.l94.

19. The ideas described here as the active model of environment bear a strong resemblance to Lakoff's theory of cognitive science which he calls experiential realism. See George Lakoff, Women, Fire and Dangerous Things (Chicago: University of Chicago Press, 1987); and also George Lakoff and Mark Johnson, Metaphors We Live By (Chicago: University of Chicago Press, 1980). The participatory model of environmental experience, however, goes still farther in the direction of experiential integration and continuity.

20. Magoroh Maruyama has identified four meta-principles of environmental design that are reflected in different cultures and historical periods and that represent alternative ways of ordering the human world. See his "Mindscapes: The Limits to Thought," World Future Society Bulletin, Sept-Oct. l979, 13-23; "Mindscapes and Science Theories," Current Anthropology, 21/5 (October 1980), 589-600; "Heterogenistics and Morphogenistics: Toward a New Concept of the Scientific," Theory and Society, 5/1 (1978), 75-95.

21. See Kurt Lewin, Principles of Topological Psychology (New York: McGraw-Hill, l936), p.205. Also see Robert W. Leeper, Lewin's Topological and Vector Psychology (Eugene, Oregon: l943), p.l4, 35-36, 37, 63, 65, 66; and Kurt Lewin, "Defining the 'field at a given time'," in M. Marx, Psychological Theory (New York: Macmillan, 1951), p.311. James J. Gibson, The Senses Considered as Perceptual Systems (Boston: Houghton Mifflin Co., l966), p.3l9. See also The Perception of the Visual World (Cambridge, MA, l950) and The Ecological Approach to Visual Perception (Boston: Houghton Mifflin, 1979), pp.127, 129, 137, 138-9, 255.

22. Barbara Sandrisser explores this perceptual integration in "Climate Responsive Design: Accepting Seasonal Change," The Yearbook of Landscape Architecture, ed. Richard Austin et al (New York: Van Nostrand Reinhold, 1985), pp.26 ff.

23. This idea is developed in my essay, "The Environment as an Aesthetic Paradigm," Dialectics and Humanism, Nos. 1-2, 1988, 95-106.

24. Yi-Fu Tuan deals with some of these issues in "Surface Phenomena and Aesthetic Experience," Annals of the Association of American Geographers, Vol. 79, No. 2, June 1989, 233-241.

25. Bernard Berenson, "The Aesthetic Movement," in Aesthetics and History (New York:

Pantheon Books, l948).

26. Geographers continue to follow Sauer in regarding the landscape as visual and distant, or at least as a separate background. "The geographic landscape is a generalization derived from the observation of individual scenes." Carl O. Sauer, "The Morphology of Landscape," in Land and Life, ed. J. Leighly (Berkeley: University of California Press, 1967), p.322. When a phenomenological analysis is applied, this may change: "Landscape is not, in its essence, made to be looked upon, but, rather, is an insertion of man into the world, a site for life's struggle, the manifestation of his being and that of others." Eric Dardel, L'Homme et la Terre: Nature de la Realite Geographique (Paris: Presses Universitaires de France, 1952), p.44. Both quotations and the translation of the second are from Edward Relph, "Geographical Experiences and Being-in-the-World: The Phenomenological Origins of Geography," in Dwelling, Place and Environment, D. Seamon and R. Mugerauer, eds. (Dordrecht: Nijhoff, 1985), pp.15-31.

27. Maurice Merleau-Ponty, "Eye and Mind," p.173.

28. Jean Piaget, quoted in E.H. Hall, The Hidden Dimension (Garden City, N.Y.: Doubleday, 1966), p.63.

29. Edmund Carpenter, Eskimo (1959), cited in Hall, The Hidden Dimension, p.73.

30. Paraphrased from Gelb by Merleau-Ponty, in The Phenomenology of Perception, p.119n.

31. The work of transactional psychologists demonstrates this brilliantly. The Ames room is the best known of many instances that exemplify the perceiver's contribution to what is perceived. When the perceiver takes visual cues in customary ways to infer the proportions of the room and the size of a person within it, the ingenious manipulation of those cues produces incongruities that dismay our expectations. For example, a person seen walking from one end of the room to the other quickly changes from a pygmy to a giant. Also see Hall, p.74.

32. Arata Isozaki, in Ma, Space-Time in Japan (New York: Cooper-Hewitt Museum, 1979, p.13. Chapter Eight also discusses the concept of 'ma.'

33. Martin Heidegger, "Building Dwelling Thinking," pp.155-157.

34. K. Tange and N. Kawazoe, Ise (Cambridge, MA: MIT Press, l965). Also see Maruyama, "Mindscapes...."

35. See Halprin, Cities, pp.208, 2l4-2l5.

36. Techniques are being developed to simulate environmental perception to guide design

decisions. The environmental simulation laboratory at the University of California at Berkeley has pioneered in this.

37. In a sense, the perceptual environment is pre-eminently, indeed unavoidably, aesthetic, both etymologically speaking and theoretically. The environment is always sensed and the richness and inclusiveness of perception, its roundness, one might say, makes that fact undeniable. This has extraordinary implications for environmental theory and for the applications of theory to environmental design and policy.

38. In Japan an arrangement of several buildings can be appreciated only by moving through the space, allowing each building gradually to come into view. It cannot be grasped from a single stationary viewpoint. See Isozaki, MA, p.36. Arnheim, however, does not quite agree with de-emphasizing the visual. See Rudolf Arnheim The Dynamics of Architectural Form, (Berkeley and Los Angeles: Univ. of California Press, l977), pp.101, 108-109, 115. Writers from different disciplines have placed architecture within an ecological framework. Koh argues for "a holistic view of the human-environment system and...an evolutionary and open-ended view of culture and of design and building." Jusuck Koh, "Ecological Design...." Allen Carlson also applies the ecological model to architecture. See his "Reconsidering the Aesthetics of Architecture."

39. The philosophy and design of museum exhibitions are developed in my essay, "The Museum

of Art as a Participatory Environment," Curator, 33/1 (March 1990), 31-39.

40. Malcolm Lowry, Hear Us O Lord from Heaven Thy Dwelling Place (London, 1969), p.272.

41. Bollnow, "Lived-Space," p.38.

42. See Ian L. McHarg, Design with Nature (Garden City: Natural History Press, 1969); and Christopher Alexander, The Timeless Way of Building (New York: Oxford University Press, 1979), A Pattern Language (New York: Oxford University Press, 1977).

43. See Fritz Steel, The Sense of Place (Boston: CBI Publications, 1981), p.187.

44. Tuan describes how the deliberate design of certain ancient Chinese cities to embody cosmological relations. Yi-Fu Tuan, Topophilia, A Study of Environmental Perception, Attitudes, and Values, (Englewood Cliffs, N.J.: Prentice-Hall, 1974), Ch. 11. I have developed some of the ideas and examples in this chapter in a number of essays on environmental aesthetics to appear in my Aesthetics and Environment: Ideas for a New Synthesis (Philadelphia: Temple University Press, forthcoming).

45. Gabriel Marcel, Metaphysical Journal (Chicago: Henry Regnery, 1952), Nov. 6th, 8th, and

9th, 1920.

46. Hall notes this force clearly: "The relation between man and the cultural dimension is one in which both man and his environment participate in molding each other. Man is now in the position of actually creating the total world in which he lives, what the ethologists refer to as his biotope. In creating this world, he is actually determining what kind of an organism he will be." E.T. Hall, The Hidden Dimension, p.4. Tuan recognizes the possibility of changing cultural beliefs by changing environment. See Topophilia, Ch. 7. See also my "Aesthetic Paradigms for an Urban Ecology," Diogenes, l03 (Fall l978), l-28.

47. Martin Heidegger, "Building Dwelling Thinking," pp.l52, 153, 156-157.